
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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MANUFACTURED ABRASIVES IN THE SECOND QUARTER 1996

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives from producers through non-mandatory surveys. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. The USGS estimates unreported production.

FUSED ALUMINUM OXIDE

Production data for the second quarter of 1996 were collected from five companies operating nine plants in the United States and Canada. Reported production of regular-grade fused aluminum oxide in the second quarter was 33,700 metric tons valued at \$11.8 million, or \$350 per ton. Production during the same period of 1995 was 34,600 tons valued at \$12.4 million, or about \$358 per ton. Output of high-purity fused aluminum oxide in the second quarter was 7,440 tons, about the same as in the same period of 1995.

Based on the rate of production in the first half of 1996, the annual output of regular-grade fused aluminum oxide is projected to be approximately 134,000 tons valued at \$47.7 million; actual production in 1995 was 126,000 tons valued at \$45.2 million. Based on second quarter production, total 1996 output of high-purity fused aluminum oxide is projected to be 29,800 tons; annual production reached 33,100 tons in 1995.

Imports of crude fused aluminum oxide through May 1996 were 25,200 tons valued at \$12.1 million¹, or \$482 per ton. Of the reported imports, 97% were from Canada. Imports of refined and ground fused aluminum oxide during the same time period were 20,000 tons valued at \$15.6 million, or \$781 per ton. The top four countries exporting the largest quantities of refined and ground material to the United States, in descending order, were China (44%), Canada (29%), Germany (12%), and Austria (9%).

Exports of fused aluminum oxide through May 1996 were 4,520 tons. The exports were valued at \$7.5 million, or \$1,669 per ton.

As of June 30, 1996, The National Defense Stockpile (NDS), contained 182,546 tons (201,257 short tons) of crude fused aluminum oxide valued at \$27 million and 30,946 tons (34,118 short tons) of fused aluminum oxide abrasive grain valued at \$16.4 million. However, the NDS goals for crude fused aluminum oxide and fused aluminum oxide abrasive grain are zero; all of the material is authorized by law for disposal.

In late 1995, the Department of Defense announced plans to sell 13,600 tons (15,000 short tons) of stockpiled crude fused aluminum oxide and 5,440 tons (6,000 short tons) of stockpiled fused aluminum oxide abrasive grain in Fiscal Year 1996. During the second quarter of 1996, the Department of Defense sold 377 tons (415 short tons) of NDS fused aluminum oxide abrasive grain. Fused aluminum oxide material in the NDS is usually offered for sale each month.

¹Trade data are from Bureau of the Census, U.S. Department of Commerce; values are Customs Values.

SILICON CARBIDE

The USGS collects silicon carbide production data from four companies operating five plants in the United States and Canada. However, the data have been withheld from this report in order to protect company proprietary information.

Imports of crude silicon carbide through May 1996 were 64,900 tons valued at \$25.5 million. Imports from China were 48,700 tons valued at \$15.7 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$605 per ton. The average price of Chinese crude was \$323 per ton. Imports of refined and ground silicon carbide for the same period were 3,770 tons valued at \$10 million, or \$2,650 per ton. During the period, China and Canada were the largest suppliers of crude material, furnishing virtually all of the tonnage with shares of 75% and 21%, respectively. In descending order, Norway (42%), Brazil (26%), and Germany (11%) were the largest suppliers of refined and ground silicon carbide.

Exports of crude silicon carbide through May 1996 were 225 tons valued at \$557,000. Exports of refined and ground silicon carbide for the period were 5,620 tons valued at \$6.1 million.

As of June 30, 1996, the National Defense Stockpile contained 20,848 tons (22,986 short tons) of silicon carbide valued at \$10.3 million; however, the stockpile goal was zero. Existing legislation authorizes disposal of all of the silicon carbide in the stockpile. The Department of Defense planned to sell 4,080 tons (4,500 short tons) of NDS silicon carbide in Fiscal Year 1996; this goal was attained in late 1995.

METALLIC ABRASIVES

Metallic abrasives information was collected from twelve companies operating thirteen U.S. plants -- six producing cut wire shot and seven producing steel shot and grit. During the second quarter of 1996, U.S. production of steel shot and grit was 62,900 tons, a 2% increase compared to the same period in 1995. Second quarter production was valued at \$28.1 million or about \$447 per ton. Based on the second quarter rate of production, total output for 1996 is projected to be about 254,000 tons valued at \$112 million; production in 1995 reached 234,000 tons valued at \$101 million.

Shipments of steel shot and grit for the second quarter were 54,900 tons valued at \$25.4 million, or \$463 per ton. Shipments during the second quarter of 1995 were 56,700 tons valued at \$25.3 million or \$446 per ton.

Second quarter production of other types of metallic shot and grit (annealed shot and grit, cut wire, and reclaimed shot and grit) was estimated to be 1,880 tons valued at \$3.7 million. Shipments were estimated to be the same as the production quantity and value.

Imports of all types of metallic shot and grit through May 1996 were 9,220 tons valued at \$5.5 million, or \$591 per ton. Canada was the largest supplier accounting for 82% of the tonnage imported.

Exports of all types of metallic abrasive through May 1996 were 11,100 tons valued at \$6.9 million, or \$623 per ton. Exports for 1995 were 30,800 tons valued at \$16.1 million, or \$523 per ton.

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TABLE 1
MANUFACTURED ABRASIVES 1/

(Metric tons unless otherwise specified)

| Source and Product | 1995 | | | | | | 1996 | | | |
|--------------------------------------|----------------|----------------------|---------------|----------------------|----------------|----------------------|---------------|----------------------|----------------|----------------------|
| | Second quarter | | Third quarter | | Fourth quarter | | First quarter | | Second quarter | |
| | Quantity | Value (thousands) | Quantity | Value (thousands) | Quantity | Value (thousands) | Quantity | Value (thousands) | Quantity | Value (thousands) |
| United States and Canada: Production | | | | | | | | | | |
| Crude aluminum oxide: | | | | | | | | | | |
| Regular: Abrasive and Refractories | 34,600 | \$12,400 | 33,900 | \$12,000 | 30,700 | \$10,700 | 33,200 | \$12,100 | 33,700 | \$11,800 |
| High purity | 7,520 | 3,550 | 8,980 | 4,220 | 10,700 | W | W | W | 7,440 | 4,130 |
| Total | 42,100 | 16,000 | 42,900 | 16,200 | 41,400 | 10,700 | 33,200 | 12,100 | 41,200 | 15,900 |
| United States: Production | | | | | | | | | | |
| Steel shot and grit | 61,500 | 26,700 | 53,500 | 23,000 | 57,600 | 24,500 | 63,900 | 28,100 | 62,900 | 28,100 |
| Other shot and grit 2/ | W | W | W | W | 1,720 e/ | 3,380 e/ | 2,070 e/ | 3,020 e/ | 1,880 e/ | 3,680 e/ |
| Total | 61,500 | 26,700 | 53,500 | 23,000 | 59,300 | 27,900 | 66,000 | 31,200 r/ | 64,800 | 31,800 |
| United States: Shipments | | | | | | | | | | |
| Steel shot and grit | 56,700 | 25,300 | 48,800 | 21,700 | 51,800 | 23,400 | 54,400 | 24,800 | 54,900 | 25,400 |
| Other shot and grit 2/ | W | W | W | W | 2,210 e/ | 8,100 e/ | 2,630 e/ | 9,350 e/ | 1,880 e/ | 3,700 e/ |
| Total | 56,700 | 25,300 | 48,800 | 21,700 | 54,000 | 31,500 | 57,000 | 34,100 r/ | 56,800 | 29,100 |

e/ Estimated. r/ Revised. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes annealed shot and grit, cut wire shot, and reclaimed shot and grit from primary producers.